

Application No.: 10/053396Case No.: 56313US009REMARKS

Reconsideration is requested.

Status of Claims

Claims 1-17 are pending. Claims 2, 5, 8, 12, 13 and 15 are amended as discussed below.

Information Disclosure Statements

Applicant notes with appreciation that the three Information Disclosure Statements have been considered.

Oath/Declaration

The original Declaration was deemed defective for failing to acknowledging the priority foreign application. A replacement Declaration referencing the priority foreign application is enclosed.

Applicant respectfully submits that the enclosed Declaration complies with 37 C.F.R. 1.67(a).

Objection to Specification

The specification was objected to for certain informalities.

Page 22 is amended to delete the extra space following the semi-colon in line 1 and the space preceding the semi-colon in line 2. Applicant notes that the Office Action referred to two extra spaces following semi-colons in lines 1 and 5 but the spaces addressed in the amendment were the only ones observed by the undersigned. In addition, a comma is replaced with a semi-colon and the series connector "and" in line 5.

In addition, during preparation of this response, it was noted that an extra space appears before the period in line 24 of page 15. This space is deleted in an amendment above.

In the event other such errors are noted, the Examiner is invited to correct them via Examiner's Amendment if expedient.

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The term "FC-405" is merely the product designation for a commercial fluorochemical silane from 3M. The term "FC-405" is not a trademark.

The Abstract is amended above to shorten it.

In view of the foregoing amendments and discussion, Applicant respectfully submits that each of the objections to the specification have been overcome.

Objections to Claims

Claims 2, 12, and 13 were objected to for informalities.

Serial commas were inserted into claims 2, 12, and 13 as suggested by the Examiner.

Claim 13 was further amended to delete the extraneous passage "any of". As surmised by the Examiner, this passage was included in error.

In view of the foregoing amendments, Applicant respectfully submits that the objections to the claims are overcome; notice that effect is respectfully solicited.

35 U.S.C. 112, Second Paragraph Is Satisfied

Claims 15 and 16 were rejected under 35 U.S.C. 112, second paragraph; claim 8 was rejected under 35 U.S.C. 112, second paragraph;

Claim 15 is amended to insert a recitation describing Q⁴. Antecedent basis is found at page 15, lines 23-24, of the application. During preparation of this response it was noted that claim 5 was similarly defective. It is similarly amended above. The amendment to claim 15 renders moot the rejection of claim 16.

Claim 8 is amended to delete the redundant passage. No new matter is introduced by the amendment.

In view of the foregoing amendments to claims 15, 5, and 8, Applicant respectfully submit that the rejections of claims 15, 16, and 8 under 35 U.S.C. 112, second paragraph, are overcome. Withdrawal of the rejections is respectfully solicited.

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Double Patenting

Claim 1 was rejected for obviousness-type double patenting over claim 7 of U.S. Patent No. 6,649,272.

The invention of the '272 patent and of the instant application were each subject to an obligation of assignment to 3M Innovative Properties Company at the time the invention in this application was made.

Applicant also brings to the Examiner's attention U.S. Patent application No. 2003/0124351 and 2004/0092675 which claim common priority with the '272 patent. The invention claimed in these applications were the subject of a similar obligation to assign to 3M Innovative Properties Company.

Applicant's Invention is Novel

Claims 1-17 were rejected under 35 U.S.C. 102(b) over U.S. Patent No. 5,980,992 (Kistner et al.) in view of the *Polymer Science Dictionary* by Mark Alger (1997);

Kistner et al. discloses a process for treatment of organic polymeric surfaces that employs a fluorinated silane of the formula $R_f-L-SiX_{3-x}R_x$ (formula (I)). According to the reference, this silane is a monomeric fluorochemical silane having one R_f group and one silane group (see column 7). The fluorochemical silane (I) does not contain repeating units and it does not contain non-fluorinated monomers or monomers with a silyl group.

In contrast, products of the present invention contain repeating units (i.e., they are a true oligomer) and multiple fluorinated groups and multiple silane groups. This leads to treatments with higher durability of performance.

Formula (II) in Kistner et al. represents a polymer with repeating units containing fluoroaliphatic groups and units containing an organic group capable of reacting with an epoxysilane (column 9, line 1-10). The polymer of formula (II) does not have hydrolysable groups, as present in our monomers M^a or group G and which are an essential part of the present invention. The hydrolysable silane groups in the present invention lead to high durability against abrasion.

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Claims 14-17 were rejected under 35 U.S.C. 102(b) over U.S. Patent No. 5,276,175
(Dams et al.)

This reference discloses compositions intended for use on fibrous substrates. The group L is capable of reacting with an isocyanate to get corsslinking to the fibrous substrate. In contrast, the present invention utilizes silane to crosslink to desired substrates, e.g., plastics, glass, and ceramics.

There is no teaching in this reference of the patentability of oligomeric silanes. The reference is silent regarding the preparation of solvent and oligomer.

Claims 1-11 and 14 were rejected under 35 U.S.C. 102(b) over U.S. Patent No. 4,886,862
(Kuwamura et al.).

In the composition disclosed in Kuwamura et al., the fluorochemical is present at about 50%. There is no disclosure or suggestion that the composition could work at the low 0.05 to 5% range disclosed by Applicant.

Conclusion

In view of the foregoing discussion and amendments, Applicants respectfully submit that the application is in condition for allowance and early notice to the effect is respectfully solicited.

Respectfully submitted,

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